DOCUMENT RESUME

ED 331 323 FL 800 340

TITLE	Analysis of New York City's 1988-1989 Adult Literacy Data Base. The New York City Adult Literacy Initiative.
INSTITUTION	Literacy Assistance Center, New York, NY.; Metis Associates, Inc., New York, N.Y.
SPONS AGENCY	New York City Office of the Mayor, N.Y.; New York State Education Dept., Albany.
PUB DATE	Jan 91
NOTE	60p.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Academic Achievement; Achievement Tests; *Adult Literacy; Databases; *English (Second Language); *Literacy Education; Longitudinal Studies; Scores; *Statewide Planning; Statistical Analysis; *Student Characteristics
IDENTIFIERS	*New York (New York)

ABSTRACT

Results of a statistical analysis of New York City's adult literacy database for its fourth year are reported. Data is derived from a citywide unit-record database that includes extensive information about enrollees in city- and state-funded classroom and tutorial programs and information on hours of instruction received by each student, achievement test results, and other selected data. The database is the most complex in the adult literacy field. The report begins with an introductory section outlining the purpose and background of the study and a brief description of the methodology used. The findings are presented in tabular form with some narrative. The findings include within-year (1988-89) demographic findings, within-year achievement test outcomes and contact hours, findings of cross-year analyses, and the results of four longitudinal analyses: (1) a two-year longitudinal vs. baseline year (1987-88) study; (2) a three-year longitudinal vs. baseline year (1986-87) study; (3) a four-year longitudinal vs. baseline year (1985-86) study; and (4) longitudinal analyses of achievement test outcomes. Implications for program and policy planning are summarized. (MSE) (Adjunct ERIC Clearinghouse on Literacy Education)

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Analysis of New York City's 1988 - 1989 Adult Literacy Data Base

Prepared for
The Literacy Assistance Center, Inc.
by
Metis Associates, Inc.

January, 1991

This report has been prepared under a contract with the Office of the Mayor, the City of New York, and the New York State Education Department, as part of the support service component of the New York City Adult Literacy Initiative.

Analysis of New York City's 1988-1989
Adult Literacy Data Base

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Analysis of New York City's 1988-1989
Adult Literacy Data Base

I. Introduction

A. Purpose

This report presents the results of a statistical analysis of the New York City adult literacy data base for program year 1988-1989. The data presented are derived from a citywide unit-record data base that includes extensive demographic information on enrollees in city- and state-funded classroom and tutorial programs throughout the city, as well as information on the hours of instruction received by each student, students' achievement test results, and other selected impact data. Examination of such information enhances our understanding of the diverse population of adults who attend literacy programs (both basic education [BE] and English for speakers of other languages [ESOL]) in New York City and the results of their participation in these programs. Since the data base has been in existence for a number of years, comparisons with data from previous program years are also presented. In addition, since participating students maintain a unique identification number, the data base permits us to identify students who continue their instruction over years and to separately analyze their demographic characteristics and performance over time.

The New York City adult literacy data base is, by far, more complex and complete than any other currently in existence in the adult literacy field. The demographic and outcome data contained in the data base provide an extremely rich source of information about adult literacy programs and about adult learners. As adult literacy programs are currently expanding rapidly, it is important that program growth and development be nurtured by a systematic and critical review of relevant data. The project described in this report is an important step in that direction.

B. Background

The New York City Adult Literacy Initiative is presently comprised of the Board of Education (BOE), the City University of New York (CUNY), the Community Development Agency (CDA), and the three New York City library systems. Each of these literacy provider agencies (LPAs) oversees the operation of various instructional programs designed to improve basic skills among adults and older youth. In addition, the Literacy Assistance Center (LAC), as part of the Initiative, provides centralized support services to the LPAs.

The various programs overseen by the LPAs all submit demographic and impact data on their enrollees, as well as certain program data (e.g., class schedules), for entry into a computerized management information system. Currently, the citywide management information system has two major components - the BOE's mainframe system and the micro-computer based

ALIES system which supports the information processing needs of community-based organizations (CBOs) funded through CDA, CUNY campuses and libraries[1]. These two subsystems contain almost identical data elements, and make use of generally consistent definitions. All student and program data from these systems are combined at the end of each program year into the city's adult literacy data base. The data are also utilized by each BOE region, CUNY campus, or community-based organization to produce required reports and to assist in various program management functions.

During fiscal year 1987, Metis Associates, Inc. was retained by the Literacy Assistance Center, Inc. to create a concatenated research file and to conduct a comprehensive analysis of data derived from the first full year of citywide system implementation (i.e., July 1, 1985 through June 30, 1986). The analysis involved a wide array of demographic as well as outcome data, and stimulated a great deal of interest within the adult literacy community. As a result, similar analyses were run on the data for the 1986-1987 and 1987-1988 program years, the second and third years of uniform citywide data collection. The 1986-1987 analyses included comparisons between the first two program years and the 1987-1988 analyses included comparisons among the first three program years[2].

This report describes the results of the statistical analyses for the fourth program year, 1988-1989, including demographic and outcome data, comparisons of the first through fourth program years, and results of various longitudinal analyses.

II. Methodology

Metis Associates, Inc. and the Literacy Assistance Center, Inc. met with an advisory committee of representatives from the LPAs, the Mayor's Office of Education Services, and the New York State Education Department to review and discuss the analytic implications of the previous studies and to develop specifications for a comprehensive within-year analysis for the 1988-1989 citywide data base and for four-year comparative and longitudinal analyses.

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[1] The New York Public Library maintains data on all its students through the ALIES system. The Queens Public Library submits data on students in classroom instruction for entry into the ALIES system. Data on students receiving tutorial instruction at Queens Public Library are maintained separately and are reported to funders in aggregate form only. Brooklyn Public Library, which serves students entirely in individual tutorial or small group instruction, uses the same procedures. These data are not, therefore, included in the citywide data base.

[2] Reports on the major findings from the 1985-1986 and 1986-1987 analyses are available upon request from the Literacy Assistance Center. Printed cross-tabultaions from each year's analyses are available for examination at the LAC.

A unified data base for research purposes, which combined needed information from the 1988-1989 BOE and ALIES files, was created. The specific steps followed in the creation of the unified data base have been described elsewhere (see, for example, Analysis of New York City's 1986-1987 Adult Literacy Data Base, Metis Associates, 1988).

The specified analyses were executed and reviewed in March, 1990 by the LAC, Metis Associates, and the advisory committee[3]. The purposes of the review were to:

- disseminate findings to the field in a timely manner;
- engage the advisory committee in discussions about additional analyses; and
- develop a consensus about issues to be addressed in this report of findings.

The advisory committee recommended that the current report emphasize demographic information obtained from the within-year (1988-1989), over years and longitudinal analyses, and that less emphasis should be placed on academic achievement results and other program outcomes included in the data base. The committee was particularly interested in issues surrounding the relationships between participants' employment and public assistance status and various other demographic characteristics. In addition, the committee was interested in reporting data on students' commutation patterns (i.e., learners' borough of residence as compared to the borough in which they attended programs). Finally, committee members stressed the importance of reporting adult literacy data derived for basic education students who received their elementary and secondary schooling in the United States.

Following the recommendations of the advisory committee, this report presents selected findings from the relevant analyses. However, it should be borne in mind that there is a great deal of additional information contained within the full set of analyses produced for this project. The additional tables are available for examination at the Literacy Assistance Center, Inc.

III. Findings

Demographic and achievement findings are summarized for within-year (1988-89), over years (1985-86 through 1988-89), and longitudinal (students enrolled in two, three, or four consecutive program years) analyses[4].

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[3] A listing of all of the tables of data from the two-volume set of statistics that were transmitted to the LAC and to the advisory committee is available from the Literacy Assistance Center.

[4] Since the patterns of missing data appear to be random, percentages reported in each of the tables throughout the findings section are based on 100% of the respondents with non-missing data.

A. Within-Year (1988-89): Demographic Findings

What are the basic demographic characteristics of participating BE and ESOL students combined, BE students, and ESOL students?

The concatenated file contains records for 48,135 students. Of these students, 17,934 or 37.3 percent were enrolled in BE, and 30,201 or 62.7 percent were enrolled in ESOL. Demographic data are presented for BE and ESOL students combined, for BE students only, and for ESOL students only[5].

Gender. Data on gender were obtained for 97 percent of the students in the 1988-89 file. Table 1 summarizes these data for BE and ESOL combined, for BE, and for ESOL. Over 60 percent of the BE and ESOL participants were female, among BE students 63.5 percent were female, and among ESOL students the percentage of females was 61.8 percent.

Table 1
Students' Gender

Gender	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Male	17,553	37.6	6,369	36.5	11,184	38.2
Female	29,118	62.4	11,058	63.5	18,060	61.8

[5] A very small proportion (less than 5%) of all students enrolled in the programs of the New York City Adult Literacy Initiative attend basic education in the native language (BENL) instructions, in either Spanish or Haitian Creole. These classes serve non-English speakers who lack literacy skills in their native language. They are not included in the analyses described here; however, a separate set of analyses will be run and a report on these students, their needs, and the services provided to them will be produced by the LAC in the coming year.

Ethnicity. Ethnic data were obtained for 96.4 percent of the BE and ESOL students. Table 2 summarizes these data. The vast majority of BE students identified themselves as Black (57.9 percent) or Hispanic (28.5 percent). Hispanics comprised 60.3 percent of the ESOL population. Eighteen percent of the ESOL students were Asians, and just under 10 percent were Black.

Table 2
Students' Ethnicity

Ethnicity	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
American Indian	122	0.3	88	0.5	34	0.1
Black	12,858	27.7	10,032	57.9	2,826	9.7
Asian	6,065	13.1	813	4.7	5,252	18.0
Hispanic	22,445	48.3	4,927	28.5	17,518	60.3
White	4,926	10.6	1,456	8.4	3,470	11.9

Age. Participants' ages were derived from their respective birth dates. Data on age were obtained for 99.5 percent of the students in the file. Table 3 shows that more than three-quarters of the BE and ESOL students combined were between 22 and 49 years of age (77.3 percent). Students enrolled in BE were generally younger than students enrolled in ESOL. Overall, students' average age was 35.1 years (33.2 for BE and 36.2 for ESOL).

Table 3
Students' Age

Age	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
17 or less	430	0.9	311	1.7	119	0.4
18 - 21	4,600	9.6	2,607	14.6	1,993	6.6
22 - 29	12,281	25.7	4,976	27.9	7,305	24.3
30 - 39	15,422	32.2	5,077	28.5	10,345	34.4
40 - 49	9,294	19.4	3,044	17.1	6,250	20.9
50 - 59	4,302	9.0	1,348	7.6	2,954	9.8
60 and above	1,542	3.2	456	2.6	1,086	3.6
Mean age	35.1		33.2		36.2	

Program Borough. Program boroughs (that is, the boroughs in which students attended class) were assigned to the file on a class-by-class basis. Of the 48,135 BE and ESOL students, program boroughs were successfully assigned to 47,935 or 99.6 percent. Table 4 presents borough distributions for the BE and ESOL students combined, and separately for BE and ESOL.

Table 4
Students' Program Borough

Borough	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Bronx	6,786	14.2	3,130	17.5	3,656	12.2
Manhattan	20,851	43.5	7,008	39.1	13,843	46.1
Brooklyn	11,183	23.3	4,439	24.8	6,744	22.5
Queens	8,684	18.1	3,106	17.3	5,578	18.6
Staten Island	431	0.9	234	1.3	197	0.7

It can be seen that by far the largest percentage of students attended programs in Manhattan -- 43.5 percent for both BE and ESOL students combined, 39.1 percent for BE students, and 46.1 percent for ESOL students.

Borough of Residence. A distribution of students' residences by borough was developed using zip codes from the students' addresses. Of the 48,135 BE and ESOL students combined, borough of residence was derived for 36,991 or 76.8 percent.

Table 5
Students' Borough of Residence

Borough of Residence	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Bronx	7,462	20.2	3,631	25.4	3,831	16.9
Manhattan	7,819	21.1	2,481	17.3	5,338	23.5
Brooklyn	13,340	36.1	5,361	37.5	7,979	35.1
Queens	7,760	21.0	2,552	17.8	5,208	23.0
Staten Island	610	1.6	279	2.0	331	1.5

Table 5 shows that, for the combined group of BE and ESOL students, the greatest number lived in Brooklyn (36.1 percent); in fact, Brooklyn had the highest number of enrollments both of BE and of ESOL students (37.5 and 35.1 percent, respectively). For BE

students, 25.4 percent reside in the Bronx, while only 16.9 percent of the ESOL students reside in that borough.

It is interesting to note that, while only 21.1 percent of the participating BE and ESOL students lived in Manhattan, more than 43 percent attended programs in Manhattan. Commutation patterns were analyzed by cross-tabulating students' residential zip codes with the locations of their program sites. The cross-tabulations in Tables 6a and 6b show the distribution of students' borough of residence in relation to where they attended programs.

Table 6a
BE Students' Borough of Residence by Program Borough

Students' Borough of Residence	Students' Program Borough					
	Bronx	Manhattan	Brooklyn	Queens	Staten Island	Total
Bronx	2,328 64.1%	1,189 32.8%	33 1.0%	60 1.7%	20 0.5%	3,630
Manhattan	89 3.6%	2,237 90.5%	68 2.8%	77 3.1%	1 0.0%	2,472
Brooklyn	42 0.8%	1,493 27.9%	3,656 68.3%	160 3.0%	5 0.1%	5,356
Queens	73 2.9%	345 13.5%	84 3.3%	2,039 79.9%	11 0.4%	2552
Staten Island	2 0.7%	79 28.3%	2 0.7%	--	196 70.3%	279
Total	2,534 17.7%	5,343 37.4%	3,843 26.9%	2,336 16.3%	233 1.6%	14,289

The data in Table 6a show that well over half of the BE students in every borough attended programs in that borough - 64.1 percent of Bronx residents attended in the Bronx, 68.3 percent of Brooklyn residents attended in Brooklyn, 70.3 percent of Staten Island residents attended in Staten Island, 79.9 percent of Queens residents attended in Queens, and 90.5 percent of Manhattan residents attended in Manhattan. Substantial numbers of students from the Bronx (32.8 percent), Staten Island (28.3 percent), and Brooklyn (27.9 percent) attended programs in Manhattan. Only 13.5 percent of Queens residents, however, attended instruction in Manhattan.

Table 6b
ESOL Students' Borough of Residence by Program Borough

Students' Borough of Residence	Students' Program Borough					
	Bronx	Manhattan	Brooklyn	Queens	Staten Island	Total
Bronx	2,839 75.6%	844 22.5%	27 0.7%	45 1.2%	--	3,755
Manhattan	125 2.4%	4,997 94.1%	95 1.8%	92 1.7%	1 0.0%	5,310
Brooklyn	13 0.2%	2,088 26.2%	5,726 72.0%	129 1.6%	--	7,956
Queens	20 0.4%	1,558 30.0%	197 3.8%	3,422 65.8%	1 0.00%	5,198
Staten Island	1 0.3%	163 49.2%	3 0.9%	8 2.4%	156 47.1%	331
Total	2,998 13.3%	9,650 42.8%	6,048 26.8%	3,696 16.4%	158 0.7%	22,550

Table 6b shows a similar pattern in many respects for ESOL students. With the exception of Staten Island, the great majority of students in every borough attended programs in that borough - 65.8 percent of Queens residents attended Queens programs, 72.0 percent of Brooklyn residents attended Brooklyn programs, 75.6 percent of Bronx residents attended Bronx programs, and 94.1 percent of Manhattan residents attended Manhattan programs. More than one-fourth of the Brooklyn residents (26.2 percent), 22.5 percent of Bronx residents, and 30.0 percent of the Queens residents attended ESOL programs in Manhattan. Among ESOL Staten Island residents approximately half attended programs in Manhattan (49.2 percent) and half attended programs on Staten Island (47.1 percent).

Day vs Evening Students. Classes were offered in all boroughs during the daytime and in the evenings to accomodate students' schedules. Table 7 shows that more ESOL students attended classes at night (62.4 percent) than during the day (37.6 percent), while more BE students attended class during the day (52.2 percent) than in the evening (47.8 percent). Data were obtained for 97.3 percent of BE students and for 95.0 percent of ESOL students.

Table 7
Program Status by Time of Day Attending Class

Time of Class	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Day	19,881	43.1	9,107	52.2	10,774	37.6
Evening	26,265	56.9	8,356	47.8	17,909	62.4

What are the demographic characteristics for participants who attended programs during the day and for those who attended in the evening?

Cross-tabulations of the time of day students attend class with other demographic characterisitics were performed to highlight the differences between these two groups of students. Only a small portion of the cross-tabulations are presented in this report. The complete set of cross-tabulations may be examined at the Literacy Asssistance Center.

Tables 8a and 8b show participants' gender in relation to the time of day they attended classes for BE and ESOL students, respectively. The data in Table 8a indicate that more BE females attended class during the day than in the evening (55.9 versus 44.1 percent), while more BE males attended in the evening than during the day (54.7 versus 45.2 percent).

Table 8a
BE Participants' Gender by Time of Day Attending Class

Time of Day Attending Class	Male		Female	
	N	%	N	%
Day	2,788	45.3	6,043	55.9
Evening	3,365	54.7	4,760	44.1

As can be seen in Table 8b, like the BE males, ESOL males were more likely to attend class in the evening than during the day (69.8 versus 30.2 percent). ESOL females, unlike BE females were also more likely to attend class in the evening than during the day (57.4 versus 42.6 percent).

Table 8b
ESOL Participants' Gender by Time of Day Attending Class

Time of Day Attending Class	Male		Female	
	N	%	N	%
Day	3,185	30.2	7,324	42.6
Evening	7,371	69.8	9,850	57.4

BE and ESOL participants' ethnicity in relation to the time of day they attended class is exhibited in Tables 9a and 9b, respectively. For both BE and ESOL programs, the ethnic constituency of daytime classes was generally similar to that for evening classes. However, among BE participants, a higher percentage of Hispanics attended class in the day than in the evening (31.5 versus 24.8 percent), while among ESOL participants, Hispanics were more likely to attend classes in the evening than during the day (64.2 versus 59.7 percent). Asian ESOL particpants were more likely to attend classes during the day than in the evening (20.5 versus 14.9 percent).

Table 9a
BE Participants' Ethnicity by Time of Day Attending Class

Ethnicity	Day		Evening	
	N	%	N	%
American Indian	31	0.4	51	0.6
Black	4,983	56.7	4,818	59.8
Asian	392	4.5	401	5.0
Hispanic	2,773	31.5	2,000	24.8
White	615	7.0	782	9.7

Table 9b
ESOL Participants' Ethnicity by Time of Day Attending Class

Ethnicity	Day		Evening	
	N	%	N	%
American Indian	5	0.1	23	0.1
Black	702	6.7	1,669	9.7
Asian	2,149	20.5	2,556	14.9
Hispanic	6,242	59.7	10,992	64.2
White	1,362	13.0	1,888	11.0

The mean age for participants who attended day classes (35.1 years of age) was almost identical to the mean age for participants who attended classes in the evening (35.0 years of age). Tables 10a and 10b show that for both BE and ESOL, the greatest percentage of participants who attended class in the day and in the evening were in their twenties and thirties. For ESOL students, a somewhat higher percentage of participants between 22 and 29 years of age attended programs in the evening (26.4 percent) than during the day (21.1 percent).

Table 10a
BE Participants' Age by Time of Day Attending Class

Age	Day		Evening	
	N	%	N	%
17 or less	231	2.6	71	0.9
18 - 21	1,422	16.3	1,078	13.3
22 - 29	2,349	26.9	2,332	28.8
30 - 39	2,417	27.6	2,413	29.8
40 - 49	1,442	16.5	1,434	17.7
50 - 59	643	7.4	596	7.4
60 +	243	2.8	181	2.2

Table 10b
ESOL Participants' Age by Time of Day Attending Class

Age	Day		Evening	
	N	%	N	%
17 or less	43	0.4	59	0.3
18 - 21	702	6.7	1,141	6.7
22 - 29	2,209	21.1	4,529	26.4
30 - 39	3,691	35.2	5,832	34.1
40 - 49	2,394	22.9	3,377	19.7
50 - 59	1,004	9.6	1,677	9.8
60 +	430	4.1	508	3.0

Cross-tabulations for students' borough of residence by the borough where they attended programs are presented in Table 11a for day students and in Table 11b for evening students. These cross-tabulations reveal that day students are much less likely to attend programs in their borough of residence than are evening students: 68.7 percent of day students from the Bronx attended programs in the Bronx, while 72.7 percent of evening students from the Bronx attended programs there; 67.0 percent of day students from Brooklyn attended programs there, while 75.4 percent of evening students from Brooklyn attended programs there; 61.8 percent of day students from Queens attended programs there, while 78.4 percent of evening students from Queens attended programs there; and only 24.9 percent of day students from Staten Island attended programs there, while 85.5 percent of evening students from Staten Island attended programs there.

Table 11a
Daytime Students' Borough of Residence by Program Borough

Students' Borough of Residence	Students' Program Borough					
	Bronx	Manhattan	Brooklyn	Queens	Staten Island	Total
Bronx	2,651 68.7%	1,132 29.3%	24 0.6%	35 0.9%	16 0.4%	3,858
Manhattan	100 2.9%	3,246 93.5%	89 2.6%	36 1.0%	--	3,471
Brooklyn	14 0.2%	1,805 31.4%	3,852 67.0%	75 1.3%	3 0.1%	5,749
Queens	11 0.4%	987 34.8%	73 2.6%	1,752 61.8%	11 0.4%	2,834
Staten Island	2 0.7%	196 72.9%	2 0.7%	2 0.7%	67 24.9%	269
Total	2,778 17.2%	7,366 45.5%	4,040 25.0%	1,900 11.7%	97 0.6%	16,180

Table 11b
Evening Students' Borough of Residence by Program Borough

Students' Borough of Residence	Students' Program Borough					
	Bronx	Manhattan	Brooklyn	Queens	Staten Island	Total
Bronx	2,394 72.7%	809 24.6%	21 0.6%	65 2.0%	4 0.1%	3,293
Manhattan	114 2.9%	3,690 93.3%	28 0.7%	121 3.1%	2 0.0%	3,955
Brooklyn	41 0.6%	1,384 20.9%	4,995 75.4%	195 2.9%	2 0.1%	6,627
Queens	82 1.8%	772 17.0%	127 2.8%	3,568 78.4%	1 0.0%	4,550
Staten Island	1 0.3%	39 11.7%	3 0.9%	5 1.5%	284 85.5%	332
Total	2,632 14.0%	6,694 35.7%	5,174 27.6%	3,954 21.1%	293 1.6%	18,718

Employment Status. Participants were asked to describe their employment status as: employed full time; employed part time; unemployed for 52 weeks or more; unemployed for less than 52 weeks; or unavailable for employment. Employment data were obtained for 96.6 percent of the total BE and ESOL population.

Table 12
Participants' Employment Status

Employment Status	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Full time	22,123	47.6	5,991	34.5	16,132	55.4
Part time	4,611	9.9	2,592	14.9	2,019	6.9
Unemployed greater than or equal to 52 weeks	6,877	14.8	3,192	18.4	3,685	12.7
Unemployed less than 52 weeks	4,902	10.5	1,866	10.7	3,036	10.4
Not available for employment	7,995	17.2	3,745	21.5	4,250	14.6

Table 12 shows that 49.4 percent of the BE students were employed -- 34.5 percent were employed full time and 14.9 percent were employed part time. Almost two thirds (62.3 percent) of the ESOL students were employed -- 55.4 percent full time and 6.9 percent part time. Long term unemployment (greater than or equal to 52 weeks) was reported by 18.4 percent of the BE students, and by only 12.7 percent of the ESOL students.

A number of cross-tabulations were performed to determine the relationship between participants' employment status and other demographic characteristics. The relations evident in these cross-tabulations may have implications for program management. For example, for participants who are employed full-time or part-time, the relationship between where they work and where they live will have implications for the locations and scheduling of classes. Where feasible, classes should be arranged to accomodate the schedules of participants working full-time during the day or part-time in the evenings. Note that only a sample of these cross-tabulations are presented in the next section; as indicated earlier, the complete set of these data is available for examination at the Literacy Assistance Center.

What are the demographic characteristic differences among participants who were employed and those who experienced long-term unemployment?

Tables 13 and 14 contain BE and ESOL participants' employment status cross-tabulated with gender and ethnicity, respectively. Among BE students, the percentage of men who were employed exceeded the percentage of women who were employed (57.9 percent and 42.9 percent, respectively). Of the BE male students, 43.1 percent were employed full time and 14.8 percent were employed part time; and of the BE female students, 28.1 percent were employed full time and 14.8 percent were employed part time. Furthermore, long-term unemployment was reported more frequently by female BE students (21.0 percent) than by male BE students (12.6 percent).

Table 13 also shows that 75.8 percent of the male ESOL students were employed (69.6 percent full time and 6.2 percent part time), while 51.8 percent of the female ESOL students were employed (44.6 percent full time and 7.2 percent part time). Female ESOL students also reported being unemployed for 52 or more weeks more frequently than did male ESOL students (14.9 percent compared with 8.1 percent).

Table 13
Participants' Employment Status by Gender

Gender	BE			ESOL		
	Employed Full Time	Employed Part Time	Unemployed ≥ 52 weeks	Employed Full Time	Employed Part Time	Unemployed ≥ 52 weeks
Male	2,748 43.1%	942 14.8%	801 12.6%	7,780 69.6%	689 6.2%	902 8.1%
Female	3,179 28.1%	1,638 14.8%	2,324 21.0%	8,057 44.6%	1,299 7.2%	2,691 14.9%

Table 14
Participants' Employment Status by Ethnicity

Ethnicity	BE		ESOL	
	Employed	Unemployed ≥ 52 weeks	Employed	Unemployed ≥ 52 weeks
American Indian	48 57.1%	4 4.8%	17 70.8%	4 16.7%
Black	5,518 55.9%	1,620 16.4%	1,926 70.3%	321 11.7%
Asian	396 49.3%	113 14.1%	3,336 64.2%	818 15.7%
Hispanic	1,775 36.4%	1,190 24.4%	10,870 63.4%	2,043 11.9%
White	735 50.9%	190 13.1%	1,664 48.6%	403 11.8%

The data in Table 14 indicate that Black BE students (55.9 percent) reported being employed more frequently than did any other ethnic group[6]. Only 36.4 percent of the Hispanic BE students were employed. Further, 24.4 percent of the Hispanic BE participants reported long-term unemployment compared with 16.4 percent of the Black, 14.1 percent of the Asian, and 13.1 percent of the White BE participants. Among ESOL participants, 70.3 percent of the Black students, 64.2 percent of the Asian and 63.4 percent of the Hispanic students reported being employed. Only 48.6 percent of the White ESOL students were employed. Finally, Table 14 indicates that, among ESOL students, Asians reported the highest rate of unemployment for 52 weeks or more.

[6] Because the number of enrollees who identified themselves as American Indian is so small (88 BE students and 34 ESOL students), the percentages relating to this groups' employment are not included in this discussion.

Table 15 presents students' employment status cross-tabulated with the time (day or evening) students attend their program.

Table 15
Participants' Employment Status by Time of Day Attending Program

Students' time of program	BE		ESOL	
	Employed	Unemployed ≥ 52 weeks	Employed	Unemployed ≥ 52 weeks
Day	2,857 32.3%	2,164 24.5%	3,471 33.0%	2,491 23.7%
Evening	5,487 67.9%	925 11.5%	13,681 79.9%	968 5.7%
Total Population	8,583 49.4%	3,192 18.4%	18,151 62.3%	3,685 12.7%

Not surprisingly, there were large differences between day and evening students' employment status within both the BE and ESOL populations. The percentage of BE students who attended programs in the evening and who were employed exceeded the percentage for the total population of BE students who were employed by 18.5 percentage points. Similarly, among evening ESOL students, the percentage who reported either full or part time employment exceeded the percentage employed within the total ESOL population by 17.6 points. Further, among daytime BE and ESOL students, the percentage of students who reported unemployment for 52 weeks or more (24.5 and 23.7 percent, respectively) was substantially greater than the corresponding percentage within the total BE (18.4 percent) and the total ESOL (12.7 percent) student populations.

Public Assistance Status. At the time of registration into the program, participating students were asked to indicate if they were receiving public assistance benefits. Overall, 22.7 percent of the BE and ESOL students combined reported receiving public assistance. Among BE students, 34.1 percent reported that they were receiving public assistance; of the ESOL students, 15.9 percent were receiving public assistance.

A number of cross-tabulations were performed to determine the relationship between participants' public assistance status and other demographic characteristics. Once again, only a sample of these cross-tabulations are presented in the next section; the complete set of these data is available for examination at the Literacy Assistance Center.

What are the demographic characteristics among participants who received and who did not receive public assistance?

Table 16 contains BE and ESOL participants' public assistance status cross-tabulated with gender. Table 16 shows that, among BE students, the percentage of women who reported receiving public assistance (40.0 percent) substantially exceeded the percentage of men who reported receiving public assistance (25.8 percent). Among ESOL students, a similar trend was found; 21.3 percent of females reported receiving public assistance, while less than ten percent (8.3 percent) of males reported receiving public assistance.

Table 16
Participants' Gender by Public Assistance Status

Gender	BE		ESOL	
	Receive public assistance	Do not report receiving public assistance	Receive public assistance	Do not report receiving public assistance
Male	1,645 25.8%	4,724 74.2%	924 8.3%	10,260 91.7%
Female	4,420 40.0%	6,638 60.0%	3,845 21.3%	14,215 78.7%

Table 17 presents BE and ESOL participants' public assistance status cross-tabulated with their employment status. For purposes of this table, "not working" is defined as those participants who reported either being unemployed for 52 weeks or more, being unemployed for less than 52 weeks, or unavailable for employment. As expected, of the BE and ESOL students receiving public assistance, the overwhelming majority (84.4 and 83.8 percent, respectively) were reported to be not working.

Table 17
Participants' Public Assistance Status by Employment Status

Public Assistance Status	BE			ESOL		
	Full time	Part time	Not Working	Full time	Part time	Not Working
Receive public assistance	292 4.9%	642 10.7%	5,069 84.4%	603 12.7%	166 3.5%	3,985 83.8%
Do not report receiving public assistance	5,699 50.1%	1,950 17.1%	3,734 32.8%	15,529 63.7%	1,853 7.6%	6,986 28.7%
Total population	5,991 34.4%	2,592 14.9%	8,803 50.6%	16,132 55.4%	2,019 6.9%	10,971 37.7%

What are the demographic characteristics of basic education participants who were educated in the United States?

The research advisory committee requested that basic education students educated in the United States be isolated for study. Since country of origin is not systematically collected on program registration forms, a new variable called "students educated in the USA" was constructed by first excluding from the BE population any immigrants and refugees, and then excluding any of the remaining BE students whose highest grade completed exceeded the number of years of education they had in the United States[7]. Of the 17,934 BE students in the data base, 4,422 (24.7 percent) identified themselves as immigrants and/or refugees. Of the remaining 13,512 BE students, 1,943 had incomplete information about either their years of US education or their highest grade completed and, thus, there was no way to determine if they were US educated, as defined here. For the remaining group of 11,569 BE students, 7,147 were identified as having been educated in the United States.

[7] If, for example, an individual completed 10th grade, but attended only 8 years of school in the US, it can be assumed that he/she attended at least 2 years of school elsewhere.

These 7,147 US educated BE students represent 44.7 percent of the BE population for whom there was sufficient information to determine their status. For this cohort, data were compiled on: borough of residence; program borough; employment status; public assistance status; and entry achievement level. In addition, cross-tabulations of program contact, achievement gains, entry levels, program location, borough of residence, employment status, and public assistance status were prepared. The complete set of these data also are available for examination at the Literacy Assistance Center.

Of the 7,147 US educated BE participants, 4,449 or 62.6 percent were female and 2,658 or 37.4 percent were male. The percentage of male US educated BE students was similar to the percentage of male BE students overall (36.5 percent) and the percentage of US educated female BE students was correspondingly similar to the percentage of female BE students overall (63.5 percent).

Table 18 presents the ethnic status for US educated BE students. More than half of the US educated BE students were Black (59.6 percent), while 28.1 percent were Hispanic. The percentage of Hispanic US educated BE students was slightly lower than that of all BE students (28.1 versus 28.5 percent, respectively).

Table 18
US Educated BE Students' Ethnicity

Ethnicity	US Educated BE		All BE	
	N	%	N	%
American Indian	58	0.5	88	0.5
Black	6,843	59.6	10,032	57.9
Asian	661	5.8	813	4.7
Hispanic	3,223	28.1	4,927	28.5
White	1,060	8.7	1,456	8.4

Table 19 presents US educated BE students' ages compared to the ages of the total BE population. More than three quarters of the US educated BE students were between 18 and 39 years of age -- 16.2 percent between 18 and 21 years of age; 28.8 percent between 22 and 29 years of age; 27.8 percent between 30 and 39 years of age. It is interesting to note that 16.2 percent of the US educated BE population was between 18 and 21 years of age, compared with only 14.6 percent of the total BE population.

Table 19
US Educated BE Students' Age

Age	US Educated BE		All BE	
	N	%	N	%
17 or less	234	2.0	311	1.7
18 - 21	1,859	16.2	2,607	14.6
22 - 29	3,317	28.8	4,976	27.9
30 - 39	3,200	27.8	5,077	28.5
40 - 49	1,836	16.0	3,044	17.1
50 - 59	770	6.7	1,348	7.6
60 and above	293	2.5	456	2.6
Mean age	32.5		33.2	

Table 20 presents US educated BE students' program borough compared with the total BE student population. The largest percentage of US educated BE students attended programs in Manhattan (42.1 percent) followed by Brooklyn (25.3 percent). Concentrations of US educated BE students in the five boroughs paralleled those of BE students in general, except that US educated students were less likely to attend Queens programs.

Table 20
US Educated BE Students' Program Borough

Program Borough	US Educated BE		All BE	
	N	%	N	%
Bronx	1,316	18.4	3,130	17.5
Manhattan	3,008	42.1	7,008	39.1
Brooklyn	1,808	25.3	4,439	24.8
Queens	881	12.4	3,106	17.3
Staten Island	125	1.8	234	1.3

US educated BE students' borough of residence is shown in Table 21. The largest percentage of such BE students resided in Brooklyn (35.1 percent) followed by the Bronx (28.1 percent) and Manhattan (21.1 percent). US educated BE students were more likely to live in the Bronx or Manhattan and less likely to live in Queens, as compared with the total BE student population.

Table 21
US Educated BE Students' Borough of Residence

Borough of Residence	US Educated BE		All BE	
	N	%	N	%
Bronx	1,974	28.1	3,631	25.4
Manhattan	1,482	21.1	2,481	17.3
Brooklyn	2,470	35.1	5,361	37.5
Queens	938	13.3	2,552	17.8
Staten Island	170	2.4	279	2.0

The employment status of US Educated BE students in comparison to BE students overall is reported in Table 22. In general, US educated BE students' employment rates were comparable to BE students' employment rates overall (49.0 versus 49.4 percent). Full time employment was reported by 31.7 percent and part time employment was reported by 17.3 percent of the US educated BE students.

Table 22
US Educated BE Students' Employment Status

Employment Status	US Educated BE		All BE	
	N	%	N	%
Full Time	3,628	31.7	16,132	34.5
Part Time	1,978	17.3	2,019	14.9
Unemployed greater than or equal to 52 weeks	2,105	18.4	3,685	12.7
Unemployed less than 52 weeks	1,299	11.4	3,036	10.4
Not available for employment	2,432	21.3	4,250	14.6

The public assistance status of US educated BE students and for all BE students appears in Table 23. In conjunction with the low rate of employment reported among US educated BE students, 36.7 percent reported receiving public assistance compared with 34.8 percent of the BE students in general.

Table 23
US Educated BE Students' Public Assistance Status

Public Assistance Status	US Educated BE		All BE	
	N	%	N	%
Receive Public Assistance	4,250	36.7	6,065	34.8
Do Not Report Receiving Public Assistance	3,680	63.3	11,362	65.2

B. Within-Year (1988-89): Achievement Test Outcomes and Contact Hours

This section of the report reviews achievement test outcomes and contact hours for students in the 1988-1989 program year. Tables 24a and 24b summarize, separately for BE and for ESOL, average achievement gains (expressed in mean scale scores and grade equivalents obtained from the TABE for BE, and in John Test raw score units for ESOL); and achievement gains as a function of entry level.

Total pre- and post-test data were obtained for 7,994 BE students (approximately 45 percent of the total BE enrollment) and for 14,915 ESOL students (approximately 50 percent of the total ESOL enrollment). It should be noted here that program separations and late entry dates account for much of this apparent data loss. Achievement gains for BE students were derived from the differences between pre- and post-test TABE Reading scale scores and grade equivalents; achievement gains for ESOL students were derived from the differences between pre- and post-test John Test raw score units. It should be noted that for BE students, TABE Reading scale scores were obtained for only 5,414 students (approximately 30 percent of the total BE enrollment).

Table 24a
BE Achievement Test Outcomes: 1988-1989

Entry Level	N	Mean Gain	
		Scale Score	Grade Equivalent
less than 3	785	47.1	10.6 months
3 - 4.9	1,658	44.8	11.3 months
5 - 6.9	3,219	32.9	10.0 months
7 - 8.9	1,831	30.8	8.2 months
9 - 12.9	501	10.7	-0.2 months
Average Achievement Gain		34.9	9.3 months

Table 24b
ESOL Achievement Test Outcomes: 1988-1989

Entry Level	N	Mean Gain (raw score)
less than 21	8,099	18.4 points
21 - 40	3,312	15.3 points
41 - 60	2,443	10.8 points
61 and above	1,061	5.3 points
Average Achievement Gain		15.5 points

It can be seen in Tables 24a and 24b that the average BE student gained 34.9 scale score units and increased by 9.3 months on the grade equivalent scale; ESOL students demonstrated an average gain of 15.5 raw score units. As one might expect, achievement gains appear to have declined for BE students as the entry level rises (e.g., BE students entering at or below 3.0 averaged a gain of 47.1 scale score units or a 10.6 month gain, while students entering between 7 and 8.9 averaged a gain of 30.8 scale score units or an 8.2 month gain). For ESOL students, as well, the total gain in raw score units was smaller for higher ESOL entry levels. Students entering the ESOL program at the lowest level showed a mean gain of 18.4 raw score units, while students entering with more than 60 John Test points gained an average of only 5.3 points. This severely curtailed performance at the highest level of ESOL is partly attributable to the influence of a test ceiling effect.

Tables 25a and 25b summarize, separately for BE and for ESOL, the average number of contact hours as a function of entry level.

Table 25a
BE Students' Contact Hours

Entry Level	Contact Hours
less than 3	144.2
3 - 4.9	122.8
5 - 6.9	119.1
7 - 8.9	106.9
9 - 12.9	97.4
Average Number of Contact Hours	117.1

Table 25b
ESOL Students' Contact Hours

Entry Level	Contact Hours
less than 20	103.5
21 - 40	115.6
41 - 60	124.3
61 and above	136.9
Average Number of Contact Hours	112.3

Tables 25a and 25b show that the average number of contact hours was 117.1 for BE students and 112.3 for ESOL students. Contact hours appear to decline for BE students as the entry level rises (e.g., BE students entering at or below 3.0 average 144.2 contact hours, while students entering above 9.0 average only 97.4 hours). Conversely, for ESOL students the average number of contact hours appears to increase for higher entry levels. Students entering the ESOL program at the lowest level show a mean of 103.5 hours, while students entering with more than 60 John Test points show an average of 136.9 hours.

C. Findings of Over-Years Analyses

A number of comparative studies were performed which contrast the results of the 1985-1986 analyses, the 1986-1987 analyses, and the 1987-1988 analyses with those obtained from the 1988-1989 file. Comparative studies addressed at least some aspects of each of the within-year analyses. Comparisons involving data elements which appeared in the data base for the first time in later files (e.g., migration patterns, day versus evening) do not include data for 1985-86.

Before describing some of the demographic and outcome data it is significant to note that, over time, the programs have been serving more and more BE and ESOL students (approximately 40,500 in 1985-1986 and more than 48,000 in 1988-1989 - an increase of almost 19%), and the within-year proportion of BE students has been steadily declining (from approximately 40% in 1985-1986 to 37.3% in 1988-1989 - a decrease of 6.8%).

Tables 26a and 26b summarize, separately for BE and for ESOL, previous participants' and 1988-1989 participants' selected demographic characteristics (i.e., gender, ethnicity, age, employment status, and public assistance status, and, where available, boroughs of residence and the time of day they attend classes).

Table 26a
Over-Years BE Students' Demographic Data

Demographic Characteristics	1985-86		1986-87		1987-88		1988-89	
	N	%	N	%	N	%	N	%
Gender:								
Men	6,869	42.4	6,946	42.1	6,804	39.1	6,369	36.5
Women	9,317	57.6	9,550	57.9	10,585	60.9	11,058	63.5
Ethnicity:								
Amer. Ind.	86	0.5	89	0.5	70	0.4	88	0.5
Black	9,534	59.4	9,646	59.2	10,202	59.1	10,032	57.9
Asian	393	2.4	541	3.3	798	4.6	813	4.7
Hispanic	4,942	30.8	4,745	29.1	4,702	27.2	4,927	28.5
White	1,092	6.8	1,285	7.9	1,492	8.7	1,456	8.4
Mean Age	--	30.9	--	31.5	--	32.6	--	33.2
Employment Status:								
Full time	4,429	28.2	5,445	33.8	5,785	33.5	5,991	34.5
Part time	1,842	11.7	2,348	14.6	2,655	15.4	2,592	14.9
Unemp. $\geq$ 52 wks.	4,357	27.7	3,358	20.8	3,351	19.4	3,192	18.4
Unemp. < 52 wks.	2,037	13.0	1,900	11.8	1,781	10.3	1,866	10.7
Unemp., not avail.	3,055	19.4	3,080	19.1	3,689	21.4	3,745	21.5
Receive Public Assist.	4,839	29.7	4,937	29.1	4,824	28.3	6,115	34.1
Attend Program in Borough of Res.:								
Bronx				66.7			2,328	64.1
Manhattan	N/A	N/A	N/A	89.8	N/A	N/A	2,237	90.5
Brooklyn				60.8			3,656	68.3
Queens				73.2			2,039	79.9
Staten Island				98.3			196	70.3
Time of Class:								
Day	N/A	N/A	8,021	50.0	9,035	53.0	9,107	52.2
Evening			8,036	50.0	8,028	47.0	8,356	47.8

It can be seen in Table 26a that:

- the percentage of women enrolled in BE programs has increased steadily from 57.6 percent in 1985-86 to 63.5 percent in 1988-89, a difference of 5.9 percentage points;

- slightly older BE students are entering the program each year;

- more BE students are employed, both full time (28.2 percent in 1985-86 versus 34.5 percent in 1988-89) and part time (11.7 percent in 1985-86 versus 14.9 percent in 1988-89); and

- despite increased employment among BE students, the number of public assistance recipients has increased by more than four percentage points.

Table 26b
Over-Years ESOL Students' Demographic Data

Demographic Characteristics	1985-86		1986-87		1987-88		1988-89	
	N	%	N	%	N	%	N	%
Gender:								
Men	9,462	39.0	9,743	37.7	9,560	36.6	11,184	38.2
Women	14,813	61.0	16,108	62.3	16,588	63.4	18,060	61.8
Ethnicity:								
Amer. Ind.	54	0.2	45	0.2	42	0.2	34	0.1
Black	2,245	9.2	2,559	10.0	2,770	10.6	2,826	9.7
Asian	4,758	19.6	4,861	18.9	4,616	17.7	5,252	18.0
Hispanic	14,325	59.0	15,579	60.7	15,898	61.0	17,518	60.3
White	2,894	11.9	2,637	10.3	2,736	10.5	3,470	11.9
Mean Age	--	35.0	--	36.0	--	36.1	--	36.2
Employment Status:								
Full time	10,733	45.4	13,336	52.2	13,846	52.9	16,132	55.4
Part time	1,716	7.3	1,659	6.5	1,939	7.4	2,019	6.9
Unemp. $\geq$ 52 wks.	3,520	14.9	3,235	12.7	3,446	13.2	3,685	12.7
Unemp. < 52 wks.	3,181	13.5	2,914	11.4	2,731	10.4	3,036	10.4
Unemp., not avail.	4,487	19.0	4,396	17.2	4,199	16.1	4,250	14.6
Receive Public Assist.	3,209	13.1	4,007	14.7	4,824	14.6	4,802	15.9
Attend Program in Borough of Res.:								
Bronx				67.1			2,839	73.6
Manhattan				94.1			4,997	94.1
Brooklyn	N/A	N/A	N/A	72.4	N/A	N/A	5,726	72.0
Queens				73.6			3,422	65.8
Staten Island				98.0			156	47.1
Time of Class:								
Day	N/A	N/A	8,710	34.0	8,682	34.2	10,774	37.6
Evening			16,888	66.0	16,674	65.8	17,909	62.4

Table 26b shows that:

- ESOL students' mean age increased slightly from 35.0 years of age in 1985-86 to 36.2 years of age in 1988-89;
- the number of ESOL participants employed full time has increased by ten percentage points, from 45.4 percent in 1985-86 to 55.4 percent in 1988-89;
- similar to BE students, more ESOL participants reported receiving public assistance benefits in 1988-89 than in 1985-86; and
- the percentage of students enrolled in daytime classes has increased from 34.0 percent in 1986-87 to 37.6 percent in 1988-89, while the percentage of students enrolled in evening classes has decreased from 66.0 percent in 1986-87 to 62.4 percent in 1988-89.

Tables 27a and 27b present the following achievement data over years for BE and ESOL students separately: mean achievement gains by entry level (expressed in TABE grade equivalent months for BE, and in John Test raw score units for ESOL); overall mean achievement gain; and average number of contact hours.

Table 27a
BE Achievement Test Mean Gains Over Years

Entry Level	1985-86	1986-87	1987-88	1988-89
less than 3	18.2	10.8	12.6	10.6
3 - 4.9	11.7	11.6	11.3	11.3
5 - 6.9	7.4	10.5	10.1	10.0
7 - 8.9	3.8	9.0	8.1	8.2
Average Achievement Gain	8.5	9.9	9.8	9.3
Average Number of Contact Hours	74.0	86.4	110.1	117.1

Table 27a shows:

- that the achievement test scores of 1988-89 BE participants improved more than the achievement test scores of the 1985-86 BE participants, but slightly less than 1986-87 and 1987-88 BE students;

- a substantial increase in the average number of contact hours, from 74.0 to 117.1 hours for BE students.

- that students who entered at lower levels improved more than students who entered at higher levels.

Table 27b
ESOL Achievement Test Mean Gains Over Years

Entry Level	1985-86	1986-87	1987-88	1988-89
less than 21	17.3	20.5	20.0	18.4
21 - 40	13.9	16.8	15.7	15.3
41 - 60	8.6	11.1	11.0	10.8
61 and above	2.6	4.0	3.6	5.3
Average Achievement Gain	13.2	16.8	16.0	15.5
Average Number of Contact Hours	81.9	85.6	103.0	112.3

Table 27b shows:

- that the achievement test scores of 1988-89 ESOL participants improved more than the achievement test scores of the 1985-86 ESOL participants, but slightly less than 1986-87 and 1987-88 ESOL students;

- a substantial increase in the average number of contact hours from 81.9 to 112.3 hours for ESOL students; and

- that the achievement test scores of students who entered at lower levels improved more than the achievement test scores of students who entered at higher levels.

D. Findings of Longitudinal Analyses

A series of analyses were executed to determine the demographic characteristics of students who participate in adult literacy programs for more than one year, and the long-term effects of program participation. For example, do students retain or surpass their initial growth during a second or third year of participation? What segments of the served population continue beyond a single year? What is the relative impact of multi-year participation?

The longitudinal analyses made use of a concatenated research file containing two years of data for all students appearing in both the 1987-1988 and 1988-1989 computer files, containing three years of data for all students appearing in the 1986-1987, 1987-1988, and 1988-1989 computer files, and containing four years of data for all students appearing in the 1985-1986, 1986-1987, 1987-1988, and 1988-1989 computer files. Students were matched for this purpose using the unique identification number which has been assigned to them. On investigation it was discovered that many students actually had very little contact with the program during at least one of their program years. Therefore, the research advisory group suggested that some minimal contact be defined before students appearing in two or more files could be considered members of a longitudinal cohort. The following definition was selected: students with twenty or more hours of contact in each consecutive year would be eligible for a cohort.

1. Two-Year Longitudinal versus Baseline Year (1987-1988)

What are the basic demographic characteristic differences among the two-year longitudinal cohort and the 1987-88 participating BE and ESOL students combined, BE students, and ESOL students?

In the aggregate, there were 9,810 students enrolled for the two consecutive program years, 1987-88 and 1988-89. Of these students, 3,997 or 40.7 percent were enrolled in BE, and 5,813 or 59.3 percent were enrolled in ESOL. In this section, the students in the two year cohort are compared with all students in the 1987-88 program year (the 1987-88 group is referred to as the baseline group). In the 1987-88 baseline group, 44,811 students were enrolled in BE and ESOL programs. Of these students, 17,815 or 39.8 percent were enrolled in BE, and 26,996 or 60.2 percent were enrolled in ESOL. Of the 1987-88 baseline group, 22.1% of the BE students and 21.5% of the ESOL students were also enrolled in 1988-89.

Tables 28a and 28b show which programs the two-year students who entered the BE and ESOL programs, respectively, were enrolled in during the 1988-89 academic year. In 1988-89, the overwhelming majority of two-year students (92.4 percent of BE students and 93.6 percent of ESOL students) remained in the program which they entered in 1987-88.

Table 28a
1989 Program Status of Second-Year Students who Originated in BE

Program	1989	
	N	%
BE	3,692	92.4
ESOL	80	2.0
HSE	188	4.7
Other	37	0.9
Total	3,997	

Table 28b
1989 Program Status of Second-Year Students who Originated in ESOL

Program	1989	
	N	%
ESOL	5,442	93.6
BE	196	3.4
HSE	38	0.7
Other	137	2.4
Total	5,813	

Gender. Table 29 graphically summarizes the gender data for students in BE and ESOL combined and for BE and ESOL separately. Overall, there were fewer men and more women in the two-year cohort than in the baseline group. The pattern is similar for both the BE and the ESOL populations.

Table 29
Two Year and Baseline Students' Gender

Gender	BE & ESOL		BE		ESOL	
	Two-Year	Baseline 1987-88	Two-Year	Baseline 1987-88	Two-Year	Baseline 1987-88
Male	3,215 33.3%	16,364 37.6%	1,389 35.3%	6,804 39.1%	1,826 31.9%	9,560 36.6%
Female	6,444 66.7%	27,173 62.4%	2,549 64.7%	10,585 60.9%	3,895 68.1%	16,588 63.4%

Age. Table 30 shows age data for students in the two-year cohort and the 1987-88 baseline group. In general, the students in the two-year cohort were older than those in the 1987-88 baseline group. There was a smaller percentage of students in the two-year cohort who were 29 years or younger in both BE and ESOL (i.e., for the two-year cohort approximately 31 percent of the BE students and 26 percent of ESOL students were 29 years or younger; for the 1987-88 baseline group, approximately 42 percent of the BE students and 30 percent of ESOL students were within this age group). The data also indicate that there was a higher percentage of students 40 years or older in the two-year cohort than in the baseline group (i.e., in the two-year cohort, 38.9 percent of BE students and 40.3 percent of ESOL students were 40 years or older, while in the baseline group, 29.6 percent of BE and 35.5 percent of ESOL were within this age group). The percentage of students between the ages of 30-39 was approximately the same for both groups.

Table 30
Students' Age

Age	BE & ESOL		BE		ESOL	
	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88
17 or less	59 0.6%	40 0.1%	39 1.0%	25 0.2%	20 0.3%	15 0.1%
18- 21	593 6.1%	3,708 8.3%	288 7.2%	2,351 13.2%	305 5.2%	1,357 5.0%
22 - 29	2,080 21.2%	11,907 26.6%	906 22.7%	5,103 28.7%	1,174 20.2%	6,804 25.2%
30 - 39	3,182 32.5%	14,262 31.9%	1,205 30.2%	5,041 28.3%	1,977 34.0%	9,221 34.2%
40 - 49	2,396 24.4%	8,786 19.6%	954 23.9%	3,134 17.6%	1,442 24.8%	5,652 21.0%
50 - 59	1,093 11.1%	4,288 9.6%	450 11.3%	1,531 8.6%	643 11.1%	2,757 10.2%
60 +	400 4.1%	1,777 4.0%	151 3.7%	608 3.4%	249 4.4%	1,169 4.3%
Mean Age	37.3	35.8	36.8	N/A	37.7	N/A

Ethnicity. Ethnic data were obtained for 98.7 of the two-year cohort. The data shown in Table 31 indicate that the ethnic composition of the two-year cohort was very similar to that of the baseline group for both BE and ESOL, except that Hispanic adults made up a somewhat higher proportion of ESOL students in the two-year cohort than in the baseline group.

Table 31
Students' Ethnicity

Ethnicity	BE & ESOL		BE		ESOL	
	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88
American Indian	25 0.3%	112 0.3%	21 0.6%	70 0.4%	4 0.1%	42 0.2%
Black	2,860 29.7%	12,972 29.9%	2,394 61.0%	10,202 59.1%	466 8.2%	2,770 10.6%
Asian	1,190 12.4%	5,414 12.5%	193 4.9%	798 4.6%	997 17.5%	4,616 17.7%
Hispanic	4,714 49.0%	20,600 47.5%	1,013 25.8%	4,702 27.3%	3,701 65.0%	15,898 61.0%
White	832 8.6%	4,228 9.8%	304 7.7%	1,492 8.6%	528 9.2%	2,736 10.5%

Public Assistance Status. The data in Table 32 show that the percentage of students receiving public assistance was somewhat higher for the two-year cohort than for the baseline group. In the two-year cohort, 33.5 percent of BE students and 23.2 percent of ESOL students received public assistance; in the baseline group, 28.3 percent of BE students and 14.6 percent of ESOL students received public assistance. Note that the percentage of ESOL students in the two-year cohort who received public assistance (32.2 percent) was much higher than the percentage in the baseline group.

Table 32
Participants' Public Assistance Status

Public Assistance Status	BE & ESOL		BE		ESOL	
	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88
Receive Public Assistance	2,705 27.6%	8,522 20.1%	1,320 33.5%	4,824 28.3%	1,350 23.2%	3,698 14.6%
Do Not Report Receiving Public Assistance	7,105 72.4%	33,899 79.9%	2,618 66.5%	12,239 71.7%	4,463 76.8%	21,660 85.4%

Employment Status. The employment data shown in Table 33 indicate that the percentage of students employed full-time was slightly lower in the two-year cohort than in the baseline group for both BE and ESOL students. The percentage of students employed part-time was more than 5 percentage points lower in the two-year cohort than in the baseline group for both BE and ESOL students. In addition, the percentage of students who were unemployed and available for employment was slightly greater in the two-year cohort than in the baseline group. The percentage of students not available for employment was substantially greater in the two-year cohort than in the baseline group, especially among ESOL students.

Table 33
Participants' Employment Status

Employment Status	BE & ESOL		BE		ESOL	
	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88	Two Year	Baseline 1987-88
Full time	3,934 41.2%	19,631 45.2%	1,288 33.0%	5,785 33.5%	2,646 49.6%	13,846 52.9%
Part time	748 7.8%	4,594 10.6%	393 10.1%	2,655 15.4%	35 0.7%	1,939 7.4%
Unemployed greater than or equal to 52 weeks	1,639 17.2%	6,797 15.6%	842 21.6%	3,351 19.4%	797 14.9%	3,446 13.2%
Unemployed less than 52 weeks	1,021 10.7%	4,512 10.4%	418 10.7%	1,781 10.3%	603 11.3%	2,731 10.4%
Not available for employment	2,211 23.1%	7,888 18.2%	959 24.6%	3,689 21.4%	1,252 23.5%	4,199 16.1%

Previous Two-Year Cohorts. Since the adult literacy data base now contains information on three separate two-year cohorts (1986/86-1986/87, 1986/87-1987/88, and 1987/88-1988/89), longitudinal analyses of the two-year cohorts may be conducted[8]. Like this group, the 1985/86-1986/87 two-year cohort consisted of students who were older (36.6 versus 35.1 years of age) and more likely to be woman (62.8 versus 59.8 percent) than the baseline group. For the ESOL program, while in the 1985/86-1986/87 two-year cohort there were fewer Hispanics than in its baseline group (52.2 versus 59.0 percent), there was a higher percentage of Hispanics in the 1987/88-1988/89 two-year cohort than in its baseline group (65.0 versus 61.0 percent). Overall, the ethnic constituencies of the two-year cohorts were similar to their respective baseline groups.

[8] The data on the 1985/86-1986/87 two-year cohort and the 1985/86 baseline group may be found in a handout distributed by Stanley J. Schneider of Metis Associates and Joan Manes of the Literacy Assistance Center at the Literacy Assistance Center's Spring Research Forum, May 1988.

While the 1987/88-1988/89 BE and ESOL two-year cohorts were less likely to be employed full-time or part-time than their baseline groups, the 1985/86-1986/87 two-year cohorts were more likely to be employed full-time than their baseline groups (37.2 versus 28.2 percent for BE and 50.9 versus 45.4 percent for ESOL).

2. Three-Year Longitudinal versus Baseline Year (1986-1987)

What are the basic demographic characteristic differences among the three-year longitudinal cohort and the 1986-87 participating BE and ESOL students combined, BE students, and ESOL students?

The concatenated file for the three-year cohort contains 2,366 students. Of these students, 936 or 39.6 percent were enrolled in BE, and 1430 or 60.4 percent were enrolled in ESOL. The computer file for the 1986-1987 baseline group contains 42,347 students. Of these students, 16,689 or 39.4 percent were enrolled in BE, and 25,658 or 60.6 percent were enrolled in ESOL. Only 5.6 percent of the 1986-87 baseline BE group and 5.6 percent of the 1986-87 baseline ESOL group remained enrolled for three years.

Tables 34a and 34b show which programs the three-year students who entered the BE and ESOL programs, respectively, were enrolled in during the 1988-89 academic year. The overwhelming majority of three-year students (83.9 percent of BE students and 85.3 percent of ESOL students) remained in the program which they entered in 1986-87.

Table 34a
1989 Program Status of Three-Year Students who Originated in BE

Program	1989	
	N	%
BE	183	83.9
ESOL	8	3.7
HSE	26	11.9
Other	1	0.5
Total	218	

Table 34b
1989 Program Status of Third-Year Students who Originated in ESOL

Program	1989	
	N	%
ESOL	198	85.3
BE	26	11.2
HSE	4	1.7
Other	4	1.7
Total	232	

Gender. Table 35 summarizes gender data for the three-year cohort and for its baseline group. There was a higher proportion of women overall in the three-year cohort as compared with the baseline group. Of the BE students, 64.4 percent in the three-year cohort were women, compared with 57.9 percent in the baseline group. Among ESOL students, women made up 67.6 percent of the three-year cohort as opposed to 62.3 percent of the baseline group.

Table 35
Students' Gender

Gender	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
Male	789 33.7%	16,689 39.4%	329 35.6%	6,946 42.1%	460 32.4%	9,743 37.7%
Female	1,554 66.3%	25,658 60.6%	596 64.4%	9,550 57.9%	958 67.6%	16,108 62.3%

Ethnicity. Table 36 summarizes the ethnic composition of both the three-year cohort and the 1986-87 baseline group. There were substantially fewer Hispanic BE students in the three-year cohort (21.0 percent) than in the baseline cohort (29.1 percent) and a much greater percentage of Black students in the three-year cohort than in the baseline cohort (68.6 versus 59.2 percent). The ethnic compostion of the two ESOL groups was quite similar.

Table 36
Students' Ethnicity

Ethnicity	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
American Indian	5 0.3%	134 0.3%	5 0.5%	89 0.5%	—	45 0.2%
Black	760 32.6%	12,205 29.1%	632 68.6%	9,646 59.2%	128 9.1%	2,559 10.0%
Asian	325 13.9%	5,402 12.9%	25 2.7%	541 3.3%	300 21.3%	4,861 18.9%
Hispanic	1075 46.1%	20,324 48.4%	194 21.0%	4,745 29.1%	881 62.5%	15,579 60.7%
White	166 7.1%	3,922 9.3%	66 7.2%	1,285 7.9%	100 7.1%	2,637 10.3%

Employment Status. Differences in employment status between the two groups are summarized in Table 37. Among BE participants, a greater number of three-year students were employed full time than in the baseline group (45.9 compared with 33.7 percent). However, fewer students in the three year cohort reported part time employment (9.2 percent) than in the baseline group (14.6 percent). It is also interesting to note that three-year BE students were unemployed for fifty-two weeks or more less frequently than were BE students in the baseline group (15.9 versus 20.8 percent). Among ESOL participants, there were only small differences between the three-year cohort and the baseline group.

Table 37
Employment Status

Employment Status	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
Full time	1,105 49.2%	18,781 45.1%	409 45.9%	5,445 33.7%	696 51.4%	13,336 52.2%
Part time	157 7.0%	4,007 9.6%	82 9.2%	2,348 14.6%	75 5.5%	1,659 6.5%
Unemployed less than 52 weeks	214 9.5%	4,814 11.6%	91 10.2%	1,900 11.8%	123 9.1%	2,914 11.4%
Unemployed greater than 52 weeks	292 13.0%	6,593 15.8%	142 15.9%	3,358 20.8%	150 11.1%	3,235 12.7%
Unavailable for employment	478 21.3%	7,476 17.9%	167 18.8%	3,080 19.1%	311 22.9%	4,396 17.2%

Public Assistance Status. Table 38 gives the percentages of students in the three-year cohort and baseline group who received public assistance. Among ESOL participants, differences between the two groups of students were most evident -- 21.9 percent of the three-year students reported receiving public assistance, compared with only 14.7 percent of the baseline students. Among BE students, in contrast, a somewhat smaller proportion of the three-year students reported receiving public assistance than did the baseline students.

Table 38
Public Assistance Status

Public Assistance Status	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
Receive Public Assistance	618 23.9%	8,944 20.3%	250 26.7%	4,937 29.1%	313 21.9%	4,007% 14.7

Students' Borough of Residence. Table 39 contains borough of residence data for BE and ESOL students combined, and BE and ESOL students separately for the three-year cohort and for the baseline group. Among BE and ESOL students combined, there were proportionately fewer three year participants than baseline participants from the Bronx (16.9 versus 21.1 percent) and substantially more from Brooklyn (36.5 versus 33.9 percent). Among BE students, a much smaller proportion of the three year participants from the Bronx (15.1 versus 25.9 percent) and a substantially greater proportion came from Staten Island (10.4 versus 0.6 percent). Among ESOL students, the residential configuration of the three-year cohort parallels its baseline group.

Table 39
Borough of Residence

Borough of Residence	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
Bronx	381 16.9%	6,260 21.1%	145 15.1%	3,132 25.9%	189 15.9%	3,128 17.7%
Manhattan	457 20.3%	5,972 20.1%	157 16.4%	2,110 17.4%	257 21.6%	3,862 21.9%
Brooklyn	821 36.5%	10,078 33.9%	390 40.7%	4,394 36.4%	386 32.4%	5,684 32.2%
Queens	555 24.7%	7,085 23.8%	166 17.3%	2,378 19.7%	351 29.5%	4,707 26.7%
Staten Island	35 1.6%	341 1.1%	100 10.4%	73 0.6%	8 0.7%	268 1.5%

Students' Program Borough. Data for students' program borough were obtained for 99.9 percent of the three year participants. These data are presented in Table 40. More BE three-year students attended programs in Brooklyn (34.7 percent) than in the 1986-87 baseline group (24.0 percent) and fewer BE three-year students than BE students who attended programs in the Bronx and Manhattan. Among ESOL students, fewer three-year cohort participants attended in Manhattan (39.4 percent) than 1986-87 baseline participants (44.6 percent).

Table 40
Program Borough

Program Borough	BE & ESOL		BE		ESOL	
	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87	Three-Year	Baseline 1986-87
Bronx	304 13.5%	5,947 13.7%	105 12.2%	2,908 17.5%	162 13.6%	3,039 11.3%
Manhattan	780 34.7%	18,672 43.1%	275 32.0%	6,765 40.7%	422 35.4%	11,970 44.6%
Brooklyn	644 28.6%	9,795 22.6%	318 37.0%	3,991 24.0%	302 25.4%	5,804 21.6%
Queens	489 21.8%	8,721 20.1%	161 18.7%	2,880 17.3%	300 25.2%	5,841 21.8%
Staten Island	31 1.4%	226 0.5%	--	62 0.5%	5 0.4%	164 0.6%

3. Four-Year Longitudinal versus Baseline Year (1985-1986)

What are the basic demographic characteristic differences among the four-year longitudinal cohort and the 1985-86 participating BE and ESOL students combined, BE students, and ESOL students?

In the aggregate, 450 adult students were enrolled in New York City adult literacy programs for the following four consecutive years: 1985-86, 1986-87, 1987-88 and 1988-89. The following section compares the demographic characteristics of participants who entered literacy programs in 1985-86 and remained in the programs for four consecutive years with characteristics of the entry level 1985-86 group of students. For the four-year participants, 1986 and 1989 enrollment data indicate that, over time the majority of participants continued to be enrolled in the same program for which they initially registered. An analysis of enrollment data for the 1985-86 group indicates that 81.5 percent of participants were registered for BE & ESOL programs and 18.5 percent were enrolled in HSE and other programs. Among the BE & ESOL

participants, 39.9 percent attended BE programs and 60.1 percent enrolled in ESOL programs.

Tables 41a and 41b show which programs the four-year students who in 1985-86 entered the BE and ESOL programs, respectively, were enrolled in during the 1988-1989 academic year. Of the 218 four-year students enrolled in BE programs in 1986, 83.9 percent remained in BE programs in 1989; 11.9 percent were enrolled in HSE programs in 1989; 3.7 percent were enrolled in ESOL programs; and 0.5 percent of this group indicated that they enrolled in some other program in 1989. Of the 232 students who were enrolled in ESOL programs in 1986, 85.3 percent continued to be enrolled in ESOL programs in 1989; 11.2 percent were enrolled in BE programs in 1989; 1.7 percent were enrolled in HSE programs; and 1.7 percent enrolled in some other program in 1989.

Table 41a
1989 Program Status of Fourth-Year Students who Originated in BE

Program	1989	
	N	%
BE	183	83.9
ESOL	8	3.7
HSE	26	11.9
Other	1	0.5
Total	218	

Table 41b
1989 Program Status of Fourth-Year Students who Originated in ESOL

Program	1989	
	N	%
ESOL	198	85.3
BE	26	11.2
HSE	4	1.7
Other	4	1.7
Total	232	

Gender. Gender data were obtained for almost all four-year participants (98.9 percent), and appear in Table 42. Of the students who remained enrolled in BE and ESOL programs during the four year period, 35.7 percent were male and 64.3 percent were female, compared with 40.2 percent male and 59.8 percent female in 1985-86 baseline group. Among the 1985-86 BE students, 42.4 percent were male and 57.6 percent were female. For the four-year BE group, 41.0 percent were male and 59.0 percent were female. Among the 1985-86 ESOL students, 39.0 percent were male and 61.0 percent were female, compared with the four-year group, in which 30.8 percent were male and 69.2 percent were female.

Table 42
Students' Gender

Gender	BE & ESOL		BE		ESOL	
	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86
Male	156 35.7%	16,331 40.2%	86 41.0%	6,689 42.4%	70 30.8%	9,462 39.0%
Female	281 64.3%	24,310 59.8%	124 59.0%	9,317 57.6%	157 69.2%	14,813 61.0%

Ethnicity. Differences within the ethnic composition of the two groups of students are summarized in Table 43. For both BE and ESOL, the proportion of Hispanic students was lower among the four-year group than in the 1985-86 baseline group. Among BE students, the proportion of Black students was higher in the four-year group than in the 1985-86 group (68.7 versus 59.4 percent). Among ESOL students, the proportion of Asian students in the four-year group was nearly twice that of the 1985-86 group (35.2 versus 19.6 percent).

Table 43
Students' Ethnicity

Ethnicity	BE & ESOL		BE		ESOL	
	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86
American Indian	1 0.2%	140 0.3%	1 0.5%	86 0.5%	---	54 0.2%
Black	155 36.8%	11,779 29.2%	145 68.7%	9,534 59.4%	10 4.4%	2,245 9.2%
Asian	83 19.7%	5,151 12.8%	3 1.4%	393 2.5%	80 35.2%	4,758 19.6%
Hispanic	172 40.9%	19,267 47.8%	45 21.3%	4,942 30.8%	127 55.9%	14,325 59.0%
White	27 6.4%	3,986 9.9%	17 8.1%	1,092 6.8%	10 4.4%	2,894 11.9%

Employment Status. There were substantial differences in employment status for the two groups. These differences are summarized in Table 44. It is notable that more than half (53.4 percent) of the 450 BE and ESOL students who were enrolled in literacy programs in NYC from 1985-86 through 1988-89 were employed on a full-time basis in 1986 compared with 38.5 percent of the 1985-86 baseline group. Further, for BE students, the differences in 1986 employment status for the two groups are of particular interest. Roughly half of the four-year participants were employed on a full time basis in 1986, compared with only 28.2 percent of the 1985-86 baseline group.

Table 44
Employment Status

Employment Status	BE and ESOL		BE		ESOL	
	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86
Full time	236 53.4%	15,162 38.5%	111 52.1%	4,429 28.2%	125 54.6%	10,733 45.4%
Part time	28 6.3%	3,558 9.0%	18 8.5%	1,842 11.7%	10 4.4%	1,716 7.3%
Unemployed less than 52 weeks	71 16.1%	7,877 20.0%	36 16.9%	4,357 27.7%	35 15.3%	3,520 14.9%
Unemployed greater than 52 weeks	33 7.5%	5,218 13.3%	12 5.6%	2,037 13.0%	21 9.2%	3,181 13.5%
Unavailable for employment	74 16.7%	7,542 19.2%	36 16.9%	3,055 19.4%	38 16.6%	4,487 19.0%

Public Assistance Status. Data for those students in the two groups who reported receiving public assistance are summarized in Table 45. Among BE students, a substantially higher proportion (29.7 percent) of the 1985-86 baseline participants reported receiving public assistance in 1986 compared to 20.2 percent of the four-year participants. In contrast, a much lower percentage of the baseline ESOL population reported receiving public assistance (13.1 percent) than the four-year cohort reported (18.1 percent).

Table 45
Students' Public Assistance Status

Public Assistance Status						
	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86	Four-Year	Baseline 1985-86
Receive Public Assistance	86 19.1%	8,048 19.7%	44 20.2%	4,839 29.7%	42 18.1%	3,209 13.1%

4. Longitudinal Analyses: Achievement Test Outcomes

This section reviews the achievement test outcomes for BE and ESOL students in each of the three longitudinal cohorts. Tables 46-51 summarize, for each BE and ESOL cohort, average achievement gains as a function of entry level (expressed in TABE grade equivalent years for BE and in John Test raw scores for ESOL), overall average achievement gain, and the average number of contact hours.

BE Longitudinal Test Outcomes. Tables 46-48 show generally similar patterns of achievement gains for all BE cohorts. For all cohorts, students entering with the lowest scores (less than three grade equivalent years) demonstrated the greatest gains, and those with the highest entry level demonstrated by far the least test gains. While most BE students achieved their greatest gains during their first program year, students in the four-year cohort entering with scores between 3-4.9 and 5-6.9 grade equivalent years demonstrated their largest growth spurt during the second program year.

The three BE cohorts differ in terms of average contact hours and average achievement gains. By comparing the data in Tables 46-48, it can be seen that:

- program contact for the four-year cohort is almost 1.8 times as great as for the two-year cohort; on average, the achievement gain for the four-year cohort is 1.6 times greater than the two-year cohort;

- students in the four-year cohort have approximately 1.3 times as much program contact as students in the three-year cohort; on average, the achievement gain for the four-year cohort is 1.4 times greater than the three-year cohort; and

- program contact for students in the three-year cohort is almost 1.4 times as great as for students in the two-year cohort; on average, the achievement gain for three-year cohort students is approximately 1.2 times greater than the two-year cohort.

Table 46
Longitudinal Analysis of Mean Achievement by Entry Level
BE Two-Year Cohort (N = 2,042 students with three test scores)

Entry Level	Pre 1987	Post 1 1988	Gain 1	Post 2 1989	Gain 2	Total Gain	N
less than 3	1.52	2.76	1.23	3.29	0.54	1.77	492
3 - 4.9	3.78	4.91	1.13	5.29	0.38	1.52	563
5 - 6.9	5.79	6.73	0.94	7.05	0.32	1.27	740
7 - 8.9	7.59	8.21	0.62	8.47	0.25	0.87	247
Average Achievement Gain: 1.15 years							
Average Number of Contact Hours: 348.6							

Table 47
Longitudinal Analysis of Mean Achievement by Entry Level
BE Three-Year Cohort (N = 513 students with four test scores)

Entry Level	Pre 1986	Post 1 1987	Gain 1	Post 2 1988	Gain 2	Post 3 1989	Gain 3	Total Gain	N
< 3	1.43	2.59	1.56	2.85	0.26	3.48	0.63	2.04	133
3 - 4.9	3.68	4.62	0.93	5.01	0.40	5.45	0.43	1.76	184
5 - 6.9	5.67	6.39	0.71	6.82	0.44	7.03	0.21	1.36	162
7 - 8.9	7.60	7.59	-.02	8.04	0.46	8.01	-.04	0.40	34
Average Achievement Gain: 1.34 years									
Average Number of Contact Hours: 469.6									

Table 48
Longitudinal Analysis of Mean Achievement by Entry Level
BE Four-Year Cohort (N = 96 students with five test scores)

Entry Level	Pre 1985	Post 1 1986	Gain 1	Post 2 1987	Gain 2	Post 3 1988	Gain 3	Post 4 1989	Gain 4	Total Gain	N
< 3	1.80	3.39	1.60	4.09	0.7	4.20	0.11	4.30	0.10	2.51	41
3 - 4.9	3.59	4.14	0.55	5.25	1.11	5.55	0.30	5.76	0.21	2.17	35
5 - 6.9	5.64	6.29	0.65	7.25	0.96	7.92	0.67	7.93	0.01	2.29	14
7 - 8.9	7.58	7.87	0.28	7.95	0.08	8.23	0.28	7.78	-.45	0.20	6
Average Achievement Gain: 1.81 years											
Average Number of Contact Hours: 621.89											

ESOL Longitudinal Test Outcomes. The data in Tables 49-51 show that, for all cohorts, students entering the ESOL program at the lowest level (0-20) made the highest gains. Conversely, students entering the program with the highest level (over 60) made the least gains. The severely curtailed performance at the highest level of ESOL is largely attributable to the influence of a test ceiling effect. In general, ESOL students achieve impressive first year growth spurts that level off in succeeding program years. However, four-year cohort students entering with scores between 21-40 and 41-60 experience their growth spurt during the second program year.

The three ESOL cohorts differ in terms of average contact hours and average achievement gains. A comparison of the data in Tables 49-51 show that:

- the average achievement gain for the three-year cohort (22.97) is higher than the average gain for the two-year cohort (29.86); the average gain for four-year cohort students (27.66), however, is slightly less than for the three year cohort; and

- program contact hours for the four-year cohort is approximately 1.3 times as much as for the three-year cohort, and 1.9 times as much as the two-year cohort; program contact hours for the three-year cohort is approximately 1.4 times as much as for the two-year cohort.

Table 49
Longitudinal Analysis of Mean Achievement by Entry Level
ESOL Two Year Cohort (N = 3,561 students with three test scores)

Entry Level	Pre 1987	Post 1 1988	Gain 1	Post 2 1989	Gain 2	Total Gain	N
0 - 20	5.80	29.74	23.94	35.61	5.88	29.81	1,822
21 - 40	30.63	48.03	17.40	51.82	3.76	21.20	860
41 - 60	49.46	61.06	11.61	63.65	2.59	14.19	615
over 60	69.00	71.67	2.67	71.05	-0.62	2.05	264
Average Achievement Gain: 22.97							
Average Number of Contact Hours: 341.3							

Table 50
Longitudinal Analysis of Mean Achievement by Entry Level
ESOL Three Year Cohort (N = 812 students with four test scores)

Entry Level	Pre 1986	Post 1 1987	Gain 1	Post 2 1988	Gain 2	Post 3 1989	Gain 3	Total Gain	N
0-20	6.95	29.10	22.14	38.89	9.80	44.44	5.55	37.49	473
21-40	30.05	46.83	16.78	51.98	5.15	55.66	3.69	25.61	178
41-60	49.40	58.98	9.57	61.50	2.52	64.85	3.36	15.45	129
> 60	69.88	72.03	2.16	66.47	-5.56	68.69	2.22	-1.19	32
Average Achievement Gain: 29.86									
Average Number of Contact Hours: 493.08									

Table 51
Longitudinal Analysis of Mean Achievement by Entry Level
ESOL Four Year Cohort (N = 96 students with five test scores)

Entry Level	Pre 1985	Post 1 1986	Gain 1	Post 2 1987	Gain 2	Post 3 1988	Gain 3	Post 4 1989	Gain 4	Total Gain	N
0-20	6.18	23.89	17.71	37.53	13.64	45.53	8.00	45.30	-0.22	39.13	45
21-40	29.11	33.59	4.48	46.59	13.00	51.07	4.48	50.30	-0.82	21.15	27
41-60	49.90	52.40	2.50	61.95	9.55	63.05	1.10	66.40	3.30	16.45	20
>60	69.75	65.00	-4.75	66.50	1.50	61.50	-5.00	68.30	6.75	-1.50	4
Average Achievement Gain: 27.66											
Average Number of Contact Hours: 641.20											

IV. Conclusions

Table 52 (on the next page) contains a summary of the demographic data of the 1988-89 students. These data indicate that the 1988-1989 population was predominately female (62.4 versus 37.6 percent male). Almost half (48.3 percent) of the total population was Hispanic. More than half of the BE population was Black (57.9 percent), and more than a quarter was Hispanic (28.5 percent). Almost two-thirds (60.3 percent) of the ESOL population was Hispanic. The mean age for students was 35.1 years old. More than half of the students were employed (47.6 percent full-time and 9.9 percent part-time). Almost one-fourth (22.7 percent) of the students received public assistance. For every borough, more than half of the residents attended programs in the same borough, with 92.5 percent of Manhattan residents who attending programs in that borough. Finally, more students attended class in the evenings (56.9 percent) than during the day (43.1 percent).

Table 52
Demographic Data

Demographic Characteristics	BE & ESOL		BE		ESOL	
	N	%	N	%	N	%
Gender:						
Men	17,553	37.6	6,369	36.5	11,184	38.2
Women	29,118	62.4	11,058	63.5	18,000	61.8
Ethnicity:						
Amer. Ind.	122	0.3	88	0.5	34	0.1
Black	12,858	27.7	10,032	57.9	2,826	9.7
Asian	6,065	13.1	813	4.7	5,252	18.0
Hispanic	22,445	48.3	4,927	28.5	17,518	60.3
White	4,926	10.6	1,456	8.4	3,470	11.9
Mean Age	--	35.1	--	33.2	--	36.2
Employment Status:						
Full time	22,123	47.6	5,991	34.5	16,132	55.4
Part time	4,611	9.9	2,592	14.9	2,019	6.9
Unemp. $\geq$ 52 wks.	6,877	14.8	3,192	18.4	3,685	12.7
Unemp. < 52 wks.	4,902	10.5	1,866	10.7	3,036	10.4
Unemp., not avail.	7,995	17.2	3,745	21.5	4,250	14.6
Receive Public Assist.	--	22.7	--	34.1	--	15.9
Attend Program in Borough of Residence:						
Bronx	5,167	69.2	2,328	64.1	2,839	74.1
Manhattan	7,234	92.5	2,237	90.5	4,997	93.6
Brooklyn	9,382	70.3	3,656	68.3	5,726	71.8
Queens	5,461	70.4	2,039	79.9	3,422	65.7
Staten Island	352	57.7	196	70.3	156	47.1
Class Time:						
Day	19,881	43.1	9,107	51.6	10,774	37.6
Evening	26,265	56.9	8,536	48.4	17,909	62.4

Clearly, data such as those contained in this report have strong and immediate implications for citywide program management, planning, and policy development. For example: information on student commutation patterns has implications for student recruitment and site placement; employment status data have implications for targeting instruction and for class scheduling; the somewhat younger, relatively under-employed, and more Public Assistance dependent, US-educated BE students may require alternative instructional methodologies and/or

support services. Similarly, if over years comparisons reveal trends in the demographic characteristics of the student body, then programs must prepare themselves to address their clients' changing needs. For example, current trend data show a population older and more likely to be employed, and with fewer basic skills than the populations of previous years. What special needs are revealed by the characteristics of the students who remain in programs over years? The longitudinal analysis have shown that relatively more of them are women and immigrants (especially Asian within ESOL), they enter programs at low achievement levels, and, by definition, they remain in programs for substantial periods of time. This group presents a unique challenge to program planners and pedagogical personnel.

While the data in this report provide valuable insights, they also suggest additional, research questions. A few examples follow. Are student commutation patterns related to employment, to program availability, or to access to transportation? Many students leave programs when they get jobs. Was getting a job their goal? If not, how can the programs continue to address their needs? Are programs serving the students who are most in need? What are the antecedents to program participation? What are the consequences of early separation? How stable are the trends that are shown in the over years analyses? What is the significance of the longitudinal cohort's achievement growth patterns?

The above questions are merely suggestive of the kinds of inquiries which may derive from an inspection of the information contained in New York City's adult literacy data base. Some of these questions are being addressed in a longitudinal study of adult learners now being conducted by the Literacy Assistance Center. Inquiry which is guided by knowledgeable practitioners, policy makers and researchers has generated, and will continue to generate, valuable insights in service to the adult literacy community.